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1991

Massachusetts Lobster Fishery Statistics

GOVERNMENT DOCUMENTS
NOV 18 1992
Massachusetts
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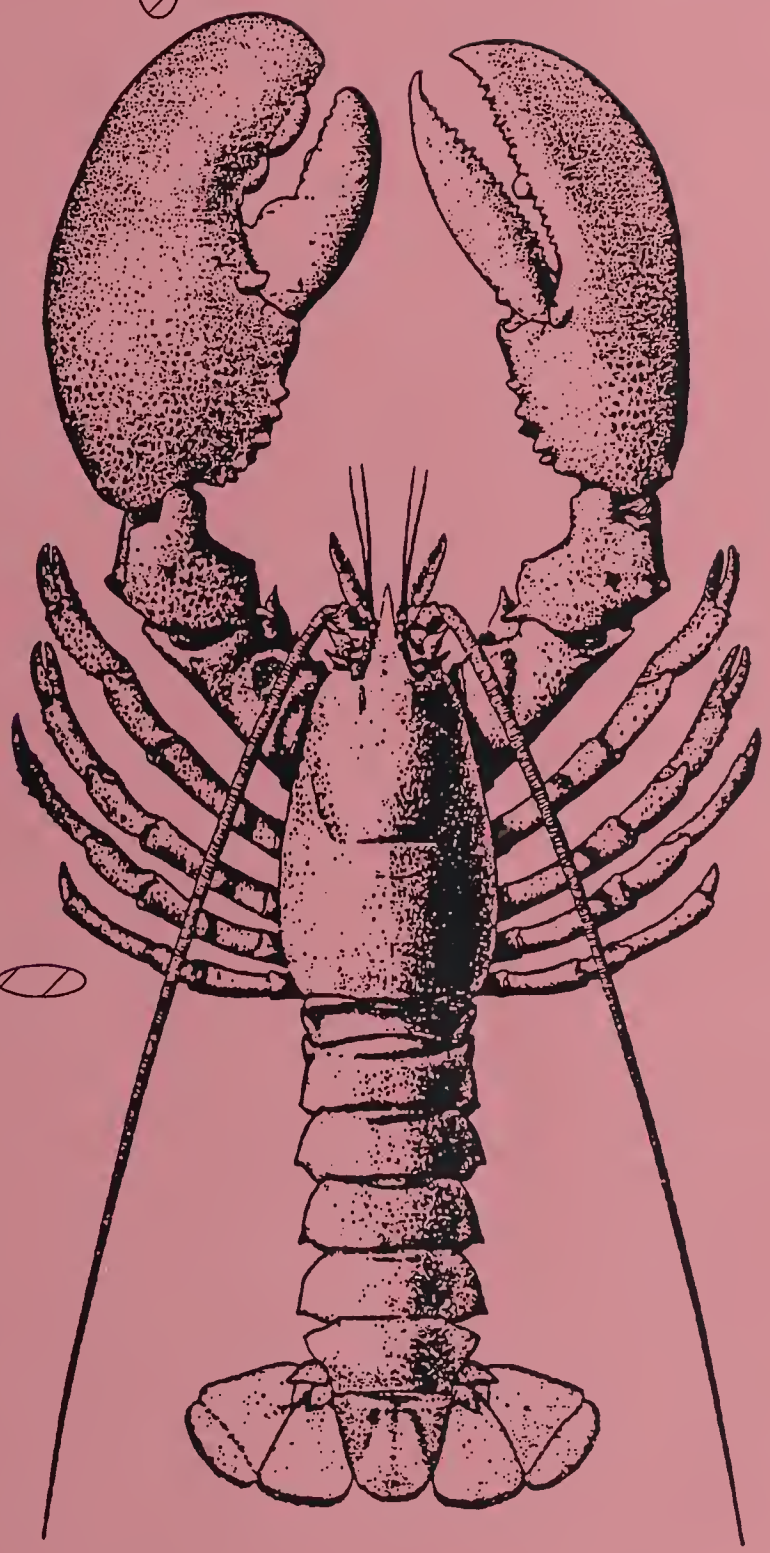
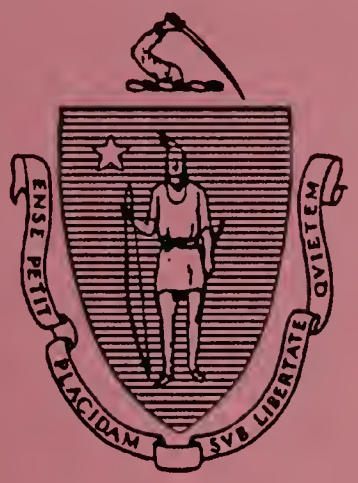
David C. McCarron
Thomas B. Hoopes





MASSACHUSETTS
DIVISION OF MARINE FISHERIES

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1991
MASSACHUSETTS
LOBSTER FISHERY
STATISTICS

by
David C. McCarron
Fisheries Biologist/Economist
and
Thomas B. Hoopes
Systems Analyst

Statistics and Management Information Systems Project
Massachusetts Division of Marine Fisheries
Cat Cove Marine Laboratory
92 Fort Avenue
Salem, Massachusetts 01970
(508) 745-3113

Technical Series 26

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The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Susan F. Tierney, Secretary
Department of Fisheries, Wildlife and Environmental Law Enforcement
John C. Phillips, Commissioner
Division of Marine Fisheries
Philip G. Coates, Director

INTRODUCTION

The commercial lobster fishery of Massachusetts is, economically, the most important fishery conducted within the territorial waters of the Commonwealth. The overall economic importance of the fishery both in New England and, in recent years, the Mid-Atlantic states, has focused the attention of federal, regional and state fishery managers on this species. Initially, in an attempt to standardize management of the fishery, the federal and state governments developed an overall lobster fishery management plan under the auspices of the State-Federal Fisheries Management Program. However, with the passage of the Fisheries Management and Conservation Act, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, has developed and implemented a management plan for the entire east coast lobster fishery. The basis and success of any such plan is an accurate statistical data base. The Commonwealth of Massachusetts, with joint funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen for many years. Historically, the data collected was used primarily for descriptive and informational purposes, and occasionally for management. With the recent emphasis on Federal management, however, these data take on added importance in terms of providing the respective management agencies with adequate information to insure that the interests of Massachusetts' lobstermen are addressed.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited by law to 1300, with an additional ten percent issued to proven hardship cases. In 1981, a statutory change provided for the establishment of a permanent waiting list from which 100 new permits were issued. Thirty special additional permits were also awarded to full time commercial fishermen who met certain criteria. In subsequent years, 80 list permits and 20 special additional permits were issued until 1988, when the issuance of new coastal permits was suspended. Living or posthumus license transfers are allowed within the immediate family and must be carried out before the license expires. Permits which are not renewed are retired

This report is the twenty - fifth annual publication of data summarized from catch reports submitted by licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, presentation was changed to reflect a more thorough collection and evaluation of the submitted information. This publication represents the sixth year in which data processing and evaluation were completely computerized. It is the second year in which data is presented to conform to the National Marine Fisheries Service statistical reporting areas. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information, or questions concerning this publication, should be made to the Division's Statistics Project in Salem, MA: (508) 745-3113.

This report has been prepared by personnel from the Division of Marine Fisheries Statistics and Data Processing Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Interjurisdictional Fisheries Act (Public Law 99-659). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. Special thanks go to Ann Spires who continues, year after year, to interpret and keypunch, with special care and accuracy, the type of reports that fishermen are likely to fill out, and to Gerald Nash for his help in Oracle development and report generation. Thanks also goes to Charlie Anderson, who heads up the project, for his continual help with system development, upgrades and suggestions concerning this publication. These three people have as integral a part in this process as we do, and without them this publication would not be possible.

SOURCE OF DATA

"No person may fish for or take lobster in coastal waters or land lobster in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries." (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal(student)) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster caught; areas fished; principal ports of landing; and information relative to the vessels and traps used in the fishery. Recreational fishermen are asked to report on their license renewal application form the number of lobsters taken during the previous year and the maximum number of traps fished.

Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of September 9, 1992 and are not expanded to represent all of the permits issued in 1991.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is **"territorial"** which represents data pertaining to all lobster activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the **"non-territorial"** category refers to all data outside those coordinates (Areas 15-25 on Figure 1B). This is a departure from years past when data were separated into inshore / offshore components. In 1990, the statistical reporting map was revised to reflect the territorial / non-territorial breakdown because it reflects a better estimate of territorial landings, it takes care of the confusing issue of an "offshore" permit holder fishing in "inshore" waters as in years past, and it conforms to the National Marine Fisheries Service's statistical reporting areas. Figures 1A and 1B show the areas as defined for 1991.

Figure 1A. 1991 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Territorial Waters and Outlying Areas

Map produced in cooperation with MassGIS & Dept. of Fisheries, Wildlife and Environmental Law Enforcement's GIS Program.

Scale = 1:110,000

0 miles 10 20 30

Description of Boundaries for Territorial Areas

Between Areas	Boundaries
1 & 2	Castle Neck, Ipswich
2 & 3	Gales Point, Manchester
3 & 4	Red Rock, Lynn
4 & 5	Strawberry Point, Cohasset
5 & 6	High Pines Ledge, Plymouth
6 & 7	Scussett Beach, Sandwich
5, 6, 7 & 8	120 Foot Line
8 & 9	70 Degree Longitude Line
9 & 10	70 Degree Longitude Line
9 & 11	41 Degree 20 Minute Longitude Line
10 & 12	Wasque Point, MV to Muskeget Island, Nantucket
10 & 13	Succonnesset Point, Mashpee to Cape Pogue, MV
11 & 12	70 Degree Longitude Line
12 & 13	41 Degree 20 Minute Longitude Line
13 & 14	Elizabeth Islands and Sow & Pigs Reef to 41 Degree 20 Minnte Longitude Line
14 & 15	70 Degree Longitude Line

Areas 1 - 14 = territorial waters.
Parts of area 10 (Nantucket Sound) are federal waters, but are managed by DMF.

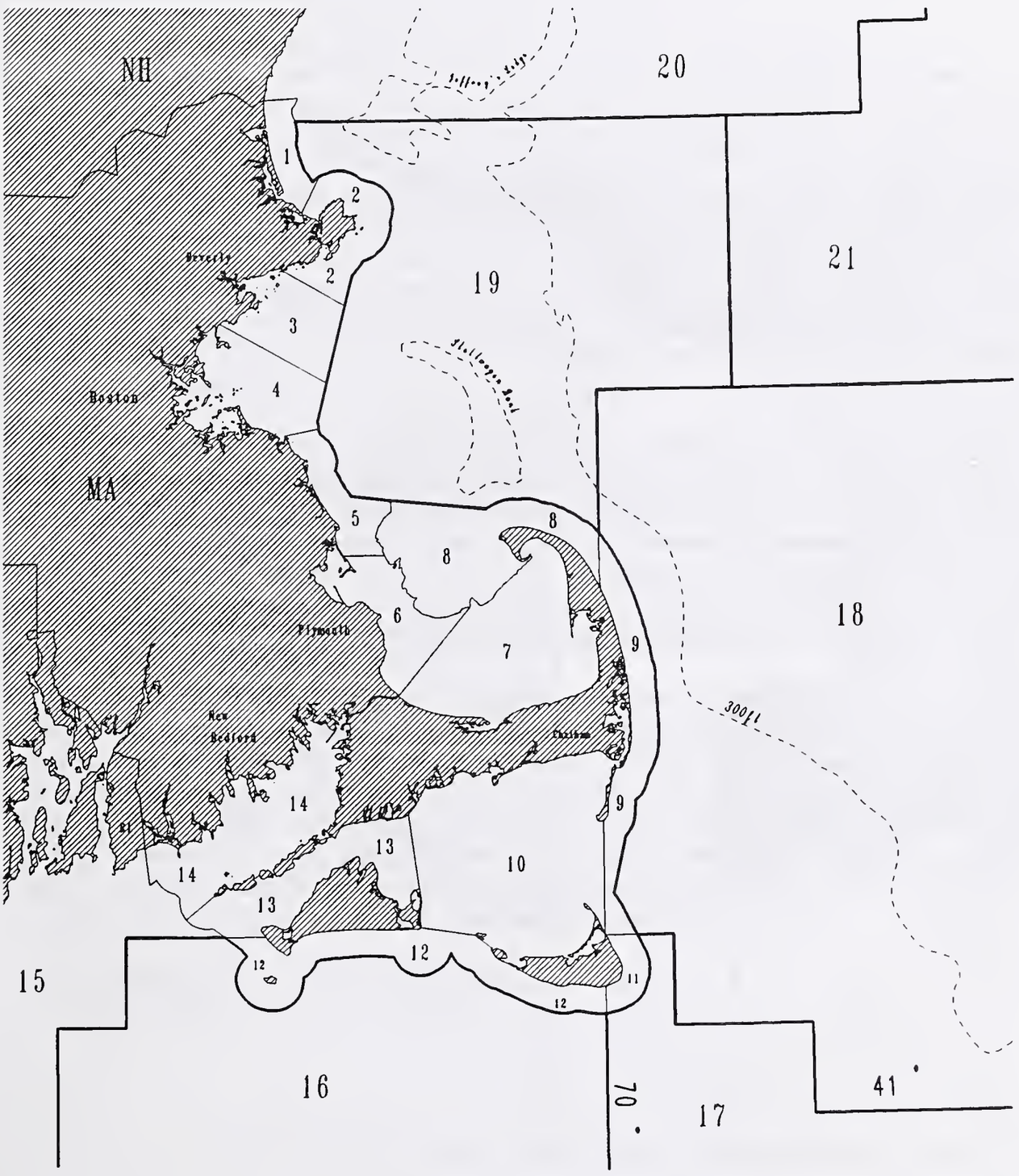


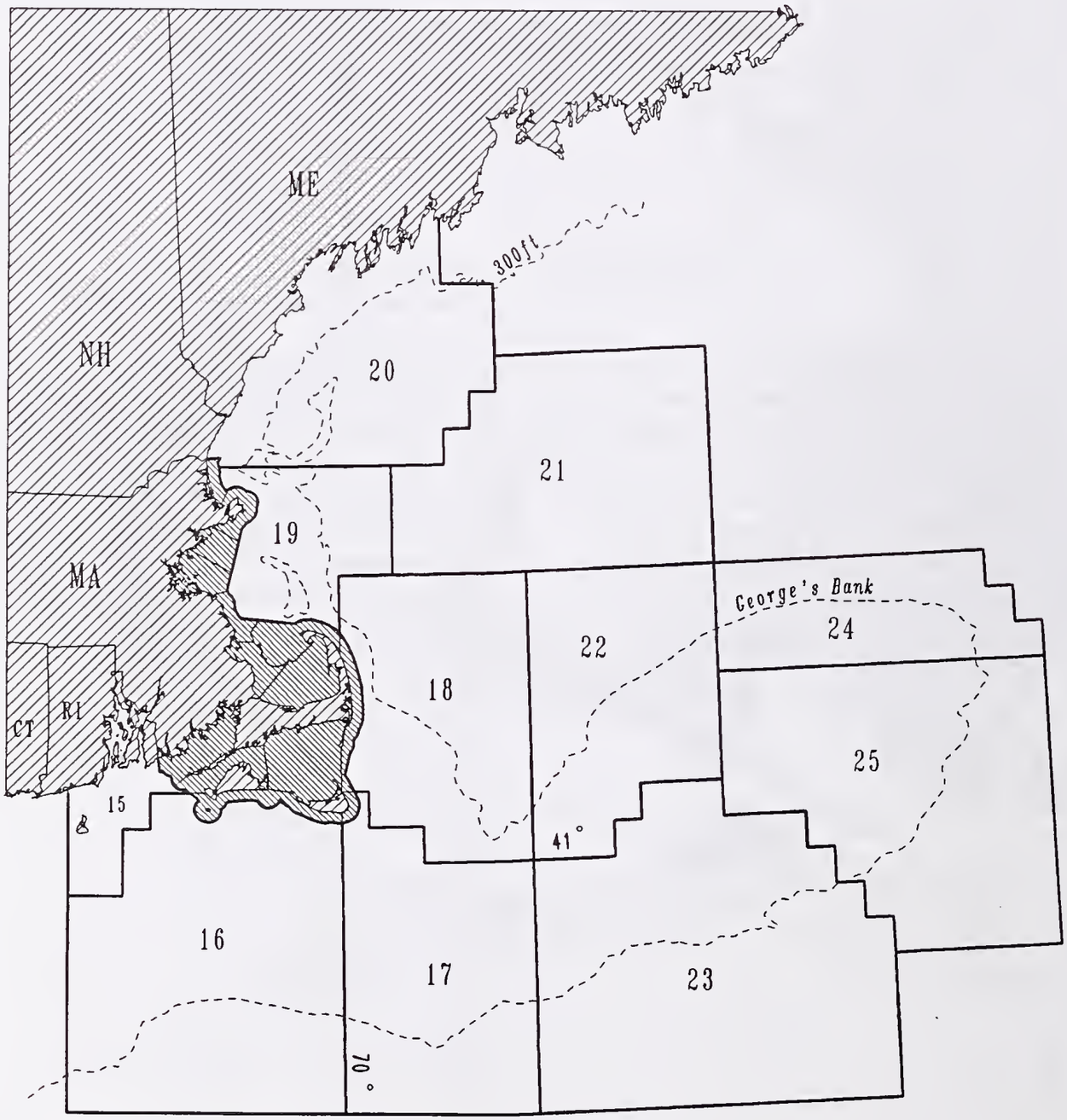
Figure 1B. 1991 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Offshore Areas (which correspond to the National Marine Fisheries Service statistical areas)

Map produced in cooperation with MassGIS & Dept. of Fisheries, Wildlife and Environmental Law Enforcement's GIS Program.

Areas 15 through 25 are the same geographic areas as the National Marine Fisheries Service statistical areas except where the Massachusetts territorial line runs through them. Offshore lobster license holders may land lobsters from areas 15 through 25 only.

Scale = 1:290,000

0 20 40 60 80 miles



Below is a brief definition of each lobster license type, both commercial and non-commercial, describing their entitlements.

Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

Seasonal Commercial: Allows the holder, if he or she is a student to harvest lobster anywhere, but with a maximum of 25 traps and only during the months June - September.

Non-commercial: Allows the holder to harvest lobster anywhere but with a maximum of only 10 traps (if fishing traps), SCUBA diving or both, and cannot sell catch.

In all cases, the legal minimum size of a harvestable lobster was a 3 1/4 inch carapace length in 1991. As promulgated by the New England Fishery Management Council in cooperation with lobster producing states in New England and the Mid-Atlantic, 1990 was the "off-year" of a 5-year program to increase the minimum legal size from 3 3/16 to 3 5/16 inches by January of 1992 through four 1/32 inch increases. However, the 5-year program was stalled at the end of 1990 and the planned increases in 1991 and 1992 were put on hold until a study of the economic impact of the program could be evaluated.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobster harvested are presented by the port of landing reported by the fishermen.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of its use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.27 pounds per lobster was used to calculate poundage figures. This figure is based on information collected by the Division's Coastal Lobster Investigations Project. For information on biological (average carapace length, sex ratios, percent of egg-bearing lobster in catch etc.) and other parameters (mortality, exploitation and catch per unit of effort rates) contact this Project in Sandwich, MA at (508) 888-1155.

Where tables refer to county, the reader is referred to Figure 9.

ISSUED LICENSES AND REPORTING STATUS

Table 1 lists the number of licenses, both commercial and recreational, issued in 1991, the total value in terms of fees and the number that reported catching lobster. There were 2,451 commercial lobster licenses issued during 1991: 1,682 coastal, 717 offshore and 52 seasonal. Non-commercial licenses issued totaled 12,025, a breakdown of their reporting status and landings can be found in Table 6.

As of September 9, 1992, a total of 100 licensed commercial lobstermen (4 percent) failed to file a catch report with the Division. Of the 2,351 commercial fishermen who reported, 653 or 23 percent claimed they did not catch any lobster during 1991. If one looks at the coastal license category in Table 2, they will see a 4 percent drop in the number of fishermen catching lobster from 1990 and a 14 percent drop over the last five years. It is interesting to note the steady decline of coastal licenses issued over the last three years as a result of the 1988 moratorium placed on the issuance of new licenses.

The number of offshore licensees catching lobster over the last five years has increased considerably, up 51 percent, with the number of licenses issued slowly declining. Student commercial licenses continue to decline in number with a 60 percent drop in number issued between 1987 and 1991.

Table 1. 1991 Massachusetts Lobster Fishery; Reporting Status of Licenses Issued

License Type (Fee)	Licenses Issued	Licensing Revenue	Reported "Catching Lobster"		Reported "No Lobster Catch"		Not Reporting	
Coastal Commercial ($ 260)	1,682	$437,320	1,230	73%	437	26%	15	1%
Offshore Commercial ($ 260)	717	$186,420	439	61%	208	29%	70	10%
Seasonal (Student) Commercial ($ 65)	52	$3,380	29	56%	8	15%	15	29%
Non-Commercial ($ 40)	12,025	$481,000	7,315	61%	1,491	12%	3,219	27%
Total	14,476	$1,108,120	9,013	62%	2,144	15%	3,319	23%

Table 2. Massachusetts Commercial Lobster Fishery; Selected Licensing Information, 1987 – 1991

	1987	1988	1989	1990	1991	Percent Five Year Change
Coastal Licenses						
Issued	1,877	1,832	1,782	1,727	1,682	-10.39
% Change		*-2.40*	*-2.73*	*-3.09*	*-2.61*	
"Caught Lobster"	1,434	1,436	1,333	1,281	1,230	-4.28
% Change		*2.60*	*-4.57*	*-0.84*	*-1.41*	
"Did Not Catch Lobster"	409	362	422	420	437	19.23
% Change		*-9.32*	*19.85*	*2.70*	*6.83*	
Not Reporting	34	34	27	26	15	-50.77
% Change		*2.46*	*-18.36*	*-0.64*	*-40.76*	
Percent Not Reporting	1.8	1.9	1.5	1.5	0.9	
Offshore Licenses						
Issued	764	795	774	738	717	-6.15
% Change		*4.06*	*-2.64*	*-4.65*	*-2.85*	
"Caught Lobster"	291	323	339	417	439	60.75
% Change		*6.67*	*7.80*	*29.01*	*8.36*	
"Did Not Catch Lobster"	319	347	338	207	208	-30.52
% Change		*4.54*	*0.05*	*-35.77*	*3.43*	
Not Reporting	161	125	97	114	70	-53.67
% Change		*-25.39*	*-20.29*	*23.26*	*-36.80*	
Percent Not Reporting	21.1	15.7	12.5	15.4	9.8	
Seasonal (Student) Licenses						
Issued	131	99	82	67	52	-60.31
% Change		*-24.43*	*-17.17*	*-18.29*	*-22.39*	
"Caught Lobster"	60	53	49	40	29	21.76
% Change		*16.89*	*11.62*	*-0.09*	*-6.59*	
"Did Not Catch Lobster"	9	15	13	6	8	123.93
% Change		*120.54*	*4.63*	*-43.51*	*71.79*	
Not Reporting	63	31	20	21	15	-40.02
% Change		*-34.89*	*-22.11*	*28.51*	*-7.97*	
Percent Not Reporting	48.1	31.3	24.4	31.3	28.8	

Note: All percentage changes are standardized to the number of licenses issued for each license type.

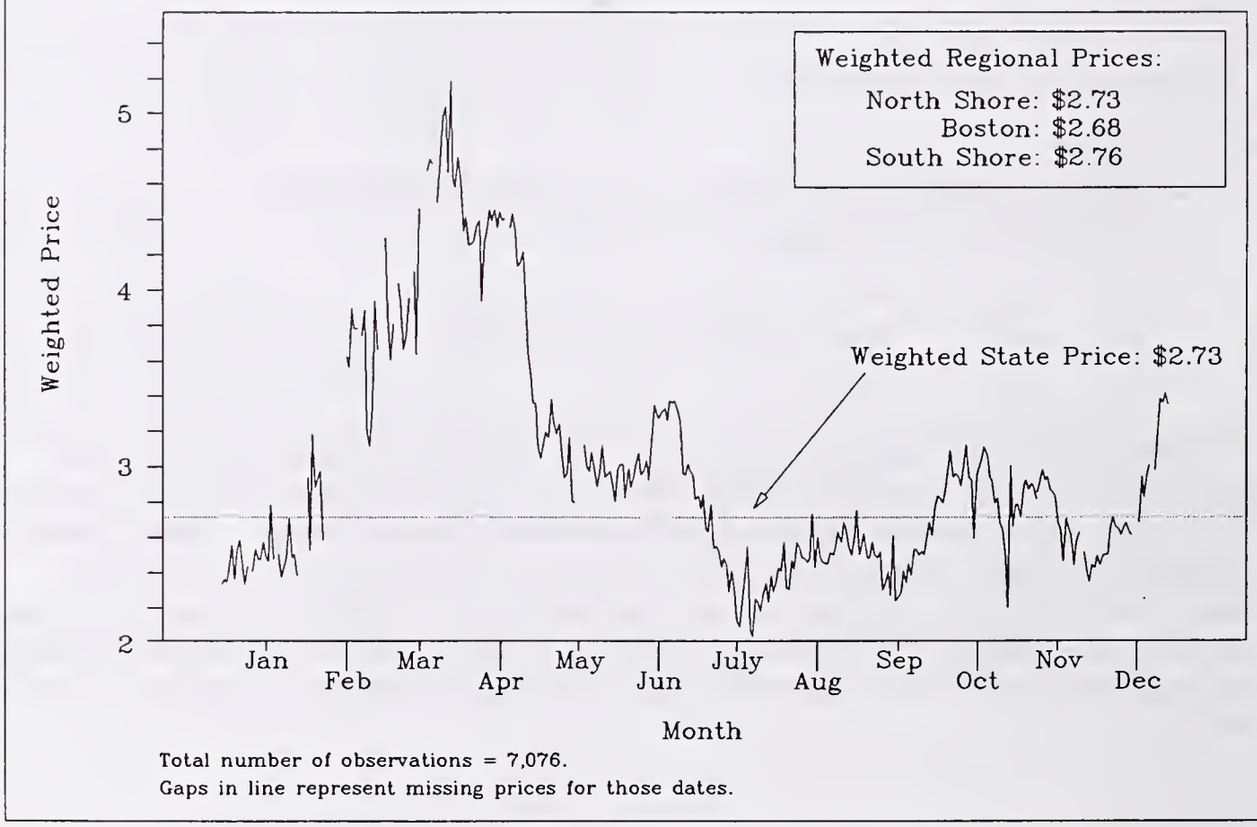
LANDINGS AND VALUE

In 1991, 15,986,991 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 3.63 percent decrease from 1990. Based on an average price of $2.73 per pound, however, the commercial catch was valued at $43,644,485 a 6.6 percent increase. Figure 2 shows the weighted ex-vessel price for 1991 as derived from audited lobstermen's records. The weighted average price of $2.73 is a significant increase from the $2.46 paid in 1990. (Weighted price means that each price is weighted by the number of pounds that were paid at that price instead of taking a flat average of all prices). Regional differences in price are typical with lower prices usually paid in Boston.

The coastal license holders reported landing 10,994,410 pounds, or 68.8 percent of the commercial catch, down ten percent from 1990. Of the 15,986,991 pounds of lobster landed commercially, 11,001,384 were reported taken within the territorial waters of the Commonwealth. In 1991, two major storms hit Massachusetts; Hurricane Bob in August and the 'no-name' Nor'easter at the end of October. In each case, gear loss was considerable, putting many lobstermen out of business for the remainder of the year. This may explain to some degree why inshore landings were down 10% from 1990, in addition to the fact that 1990 was a banner year for Massachusetts landings. In total pounds of lobster landed, Essex County ranked first, Plymouth County second and Bristol County third. See Table 3 for a breakdown of pounds landed and number of fishermen by license type and county and Table 4 for a five-year comparison of selected landings and effort statistics. Trap and non-trap landings and the number of traps fished are not available for years prior to 1990, as shown in Table 4, since the statistical reporting map was changed in 1990. These figures are available for the old "inshore / offshore" designations only (see 1989 and prior year's reports).

Gloucester ranked as the number one port in total pounds landed followed by Boston, Plymouth and Fairhaven, respectively. In total numbers of active commercial fishermen, Essex County ranked first with 602, Plymouth County second with 341 and Bristol County third with 290. Gloucester ranked first in active fishermen followed by New Bedford, Boston and Plymouth, respectively. See Tables 3 and 5, (the shaded areas in Table 5 refer to the top 10 cities in at least one of the two categories: pounds landed or number of fishermen).

Figure 2. 1991 Massachusetts Commercial Lobster Fishery; Weighted Ex-Vessel Price Derived from Audited Lobstermen's Records



Total number of observations = 7,076.
Gaps in line represent missing prices for those dates.

Table 3. 1991 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (Lbs.) and Value of Harvest

AREA:	TERRITORIAL (Areas 1 - 14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		---- COASTAL -----		---- OFFSHORE ----			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Fishermen	4	120	10		5	139	8		15	36	59 +	198 +
Pounds	5,157	1,042,010	76,129		2,729	1,126,025	220,061	953	721,157	48,339	990,509	2,116,535
Value ($)	14,079	2,844,687	207,833	0	7,450	3,074,049	600,766	2,602	1,968,759	131,964	2,704,091	5,778,139
BRISTOL												
Fishermen		64				64	18		21	186	225	289 +
Pounds		389,607				389,607	467,961		1,064,317	299,799	1,832,078	2,221,684
Value ($)	0	1,063,626	0	0	0	1,063,626	1,277,534	0	2,905,586	818,451	5,001,572	6,065,198
DUKES												
Fishermen		22				22 +			8	3	11 +	33 +
Pounds		72,773	2,587			75,360	49,558		47,479	2,735	99,772	175,133
Value ($)	0	198,671	7,063	0	0	205,734	135,295	0	129,617	7,467	272,378	478,112
ESSEX												
Fishermen		454	8		10	472 +	31	5	6	85	127	599 +
Pounds	334	4,271,911	33,062	3,462	1,584	4,310,352	807,726	5,830	155,176	262,439	1,231,170	5,541,522
Value ($)	912	11,662,317	90,258	9,450	4,324	11,767,261	2,205,092	15,915	423,630	716,458	3,361,095	15,128,356
NANTUCKET												
Fishermen		4				4					0 +	4 +
Pounds		10,794				10,794	42,126			5,164	47,289	58,084
Value ($)	0	29,468	0	0	0	29,468	115,003	0	0	14,096	129,100	158,568
NORFOLK												
Fishermen		54				54 +					0 +	54 +
Pounds		535,722	23,227		100	559,049	67,739				67,739	626,788
Value ($)	0	1,462,521	63,410	0	273	1,526,203	184,926	0	0	0	184,926	1,711,130
PLYMOUTH												
Fishermen	5	267	11	4	13	300	9	4	9	19	41	341 +
Pounds	1,919	2,590,031	65,042	3,959	2,561	2,663,512	372,148	4825	43,563	61,177	481,714	3,145,226
Value ($)	5,239	7,070,784	177,566	10,808	6,992	7,271,388	1,015,965	13,172	118,927	167,014	1,315,078	8,586,467
SUFFOLK												
Fishermen		108				108 +	3		7	26	36	144 +
Pounds	9,500	1,844,002	13,182			1,866,684	57,604		50,359	127,268	235,231	2,101,915
Value ($)	25,935	5,034,126	35,987	0	0	5,096,048	157,259	0	137,480	347,441	642,180	5,275,807
STATE TOTAL *												
Fishermen	12	1,093	34	*	28	1,163 +	74	*	66	356	499 +	1,662 +
Pounds	16,910	10,756,850	213,229	7,421	6,974	11,001,384	2,084,923	11,608	2,082,051	806,920	4,985,502	15,986,886
Value ($)	46,164	29,366,201	582,116	20,258	19,039	30,033,778	5,691,841	31,688	5,683,999	2,202,892	13,610,420	43,644,199
OUT OF STATE												
Fishermen						0 +				14	14 +	14 +
Pounds		6,090				6,090			61,431	4,694	66,125	72,215
Value ($)	0	16,626	0	0	0	16,626	0	0	167,707	12,813	180,520	197,146

+ Row and column totals may not equal the sum of the rows or columns due to masking of the data.

Value is based on an ex-vessel price of $2.73, see Figure 2.

Table 4. Massachusetts Commercial Lobster Fishery; Selected Landings (Lbs.) and Effort Statistics, 1987 – 91

	1987	1988	1989	1990	1991	Percent Five Year Change
Total Landings	13,384,566	14,262,798	14,610,078	16,567,377	15,986,991	19.44
Percent Change		6.56	2.43	13.40	-3.50	
Total Traps Fished	459,360	460,031	453,447	458,280	485,924	5.78
Percent Change		0.15	-1.43	1.07	6.03	
Total Value	$40,515,081	$44,785,186	$41,200,420	$40,755,747	$43,644,485	7.72
Percent Change		10.54	-8.00	-1.08	7.09	
TERRITORIAL (Inside 3 Miles)						
Landings (see note below)	9,371,224	9,700,058	10,391,098	12,260,805	11,001,384	17.40
Percent Change		3.51	7.12	17.99	-10.27	
Value	$28,366,695	$30,458,182	$29,302,896	$30,161,580	$30,033,778	5.88
Percent Change		7.37	-3.79	2.93	-0.42	
Trap Landings	*	*	*	12,223,266	10,977,053	
					-10.20	
Traps Fished	*	*	*	385,201	397,951	
					3.31	
Non-Trap Landings (Gillnet, Diver)	*	*	*	37,539	24,331	
					-35.18	
NON-TERRITORIAL (Outside 3 Miles)						
Landings (see note below)	4,013,342	4,562,740	4,218,980	4,306,572	4,985,607	24.23
Percent Change		13.69	-7.53	2.08	15.77	
Value	$12,148,386	$14,327,004	$11,897,524	$10,594,167	$13,610,707	12.04
Percent Change		17.93	-16.96	-10.95	28.47	
Trap Landings	*	*	*	3,616,544	4,166,974	
					15.22	
Traps Fished	*	*	*	73,079	87,973	
					20.38	
Non-Trap Landings (Gillnet, Trawler)	*	*	*	690,028	818,633	
					18.64	
Average Price ($) / Pound	3.03	3.14	2.82	2.46	2.73	
Percent Change		3.73	-10.19	-12.77	10.98	
Ave. Lbs. / Trap-Haul	0.6304	0.6478	0.6601	0.7336	0.7008	
Percent Change		2.76	1.90	11.13	-4.47	
Ave. Lbs. / Trap	28.15	29.88	31.00	34.56	31.17	
Percent Change		6.15	3.75	11.50	-9.83	

* Figures not available for these years, only inshore/offshore breakdown available. See explanation in text.

Territorial and non-territorial landings for 1987–1989 were calculated based on the lobsterman's estimate of the percent of his total landings caught from territorial waters.

Table 5. 1991 Massachusetts Commercial Lobster Fishery; Number of Fishermen and Landings by Homeport. Does Not Include Seasonal Licenses and Their Landings.

TOWN	FISHERMEN NUMBER	FISHERMEN RANK	POUNDS TERRITORIAL	POUNDS NON-TERRITORIAL	TOTAL POUNDS	PERCENT	RANK
BARNSTABLE-YARMOUTH	11	24	32,786	367,037	399,823	2.50	16
BEVERLY	40	12	580,206	198,817	779,024	4.87	5
BOSTON	113	3	1,431,477	224,021	1,655,498	10.36	2
BOURNE	8	27	43,919		43,919	0.27	39
CHATHAM	25	18	114,261	113,987	228,247	1.43	23
CHILMARK	20	21	62,862	91,025	153,887	0.96	27
COHASSET	42	10	466,646	17,751	484,397	3.03	12
DANVERS	15	22	83,575	2,970	86,544	0.54	31
DARTMOUTH	15	22	22,164	8,646	30,810	0.19	41
DENNIS-BREWSTER	20	21	142,688	524	143,212	0.90	28
DUXBURY	7	28	44,140		44,140	0.28	38
ESSEX	9	26	14,559		14,559	0.09	47
FAIRHAVEN	60	7	81,769	718,585	800,354	5.01	4
FALMOUTH-GOSNOLD	15	22	18,299	524	18,823	0.12	45
GLOUCESTER	205	1	1,010,397	825,849	1,836,246	11.49	1
HARWICH	5	30	16,157	98,217	114,374	0.72	29
HINGHAM	32	16	521,818	29,443	551,262	3.45	10
HULL	32	16	328,924	19,935	348,859	2.18	19
IPSWICH-ROWLEY	21	20	57,498	5	57,503	0.36	33
KINGSTON	6	29	25,235		25,235	0.16	43
LYNN	11	24	254,533	1,050	255,583	1.60	22
MANCHESTER	33	15	214,519	74,836	289,355	1.81	21
MARBLEHEAD	53	9	425,342	35,948	461,290	2.89	13
MARSHFIELD	81	5	487,050	238,442	725,493	4.54	7
MATTAPOISETT	10	25	39,711	13,829	53,540	0.34	35
NAHANT	32	16	437,730	21,759	459,489	2.88	14
NANTUCKET	6	29	10,794	47,289	58,083	0.36	32
NEW BEDFORD	175	2	152,367	541,266	693,633	4.34	9
NEWBURYPORT-NEWBURY	22	19	31220	18646	49,866	0.31	36
ORLEANS-EASTHAM	25	18	173,015	4,208	177,224	1.11	25
PLYMOUTH	89	4	781,451	40,164	821,616	5.14	3
PROVINCETOWN	41	11	164,258	36,671	200,929	1.26	24
QUINCY	7	28	30,809	15,213	46,022	0.29	37
REVERE-MEDFORD	12	23	280,382	9,091	289,473	1.81	20
ROCKPORT	59	8	434,903	6,904	441,806	2.76	15
SALEM	12	23	24,759	12,959	37,718	0.24	40
SALISBURY-AMESBURY	10	25	18,635	1,453	20,088	0.13	44
SANDWICH	37	14	384,483	369,866	754,349	4.72	6
SAUGUS	39	13	349,414	5,000	354,415	2.22	18
SCITUATE	61	6	392,074	126,410	518,484	3.24	11
SWAMPSCOTT	31	17	371,479	24,975	396,454	2.48	17
TISBURY-EDGARTOWN-OAK BLUFFS	12	23	7,760	8,224	15,984	0.10	46
TRURO	6	29	12,850		12,850	0.08	48
WAREHAM-MARION	10	25	40,547	13,490	54,037	0.34	34
WELLFLEET	5	30	25319.25		25,319	0.16	42
WESTPORT-FALL RIVER-SWANSEA	40	12	133,307	563,686	696,992	4.36	8
WEYMOUTH	9	26	61,493	34,775	96,269	0.60	30
WINTHROP	22	19	154,826	2,119	156,945	0.98	26
STATEWIDE TOTAL	1,651		10,994,410	4,985,607	15,980,017	100.00	
OUT OF STATE	18		6,090	66,125	72,215		

Shaded areas refer to towns which rank in top 10 for one or both of the categories.

RECREATIONAL LOBSTER FISHERY

Recreational statistics are shown in Table 6. Licenses issued in 1991 totalled 12,025, down slightly from 1990, with 7,315, or 61 percent, reporting that they fished for lobster. In general, reporting rates and landings did not change much from 1990. Landings amounted to 402,888 pounds or only 2.5 percent of commercial landings. Often there are concerns by the commercial sector that recreational fishermen have a detrimental effect on the resource. This obviously is not the case, as these figures illustrate. It should be noted that those individuals who did not report, were not able to renew their recreational license for 1992. The total number of licenses issued is continuing on a downward trend, off 7 percent from 1989 and one quarter of the participants in the recreational fishery have turned over in the past year; historically, this kind of turn-over rate is not unusual.

Table 6. 1991 Massachusetts Recreational Lobster Fishery; License Status and Harvest Information

License Type:	Diver	Diver/Pot	Potman	Method Unknown	Total	Percent
1) Number of Licenses Issued in 1991	4,634	3,508	3,883	0	12,025	
2) Number That Reported	3,214	2,661	2,931	0	8,806	*73.23%*
a) Total Number That Fished	2,650	2,187	2,478	0	7,315	60.83%
b) Total Number That Did Not Fish	564	474	453	0	1,491	12.40%
3) Number That Did Not Report	1,493	891	1,027	0	3,219	*26.77%*
						Percent Change
4) Number of Lobsters Reported Landed	52,939	94,653	169,643	0	317,235	from 1990
Pounds of Lobsters (Calculated)*	67,233	120,209	215,447	0	402,888	*-3.37%*
5) Number Pots Fished		7,240	19,388	0	26,628	*-2.54%*
6) Number of Hours Diving	43,748	33,381		0	77,129	*-7.52%*

* Based on 1.27 Pounds per Lobster.

Territorial landings by commercial fishermen were concentrated during the months June through November when 90 percent of the yearly harvest was landed. This is a typical scenario from year to year, where catch increases sometime in mid to late July and peaks in August and September. Water temperatures rise during this time inducing growth and subsequent recruitment of previously sub-legal lobsters into the legal size category. See Table 7 and Figure 3.

The greatest harvest of lobster taken from territorial waters was from the Boston Harbor vicinity (including outlying areas out to the territorial line or Area 4 on Figure 1A), where approximately 41% of the state's territorial harvest was caught. This far outweighs any of the other designated areas in terms of landings.

Table 7. 1991 Massachusetts Commercial Lobster Fishery; Percent Monthly Territorial Harvest for Each License Type

Month	Coastal	Seasonal
January	1.23	0.00
February	0.51	0.00
March	0.54	0.00
April	1.33	0.00
May	2.86	0.00
June	10.06	18.17
July	16.65	34.66
August	19.64	34.16
September	20.49	13.02
October	15.99	0.00
November	7.62	0.00
December	3.09	0.00
Total	100.00	100.00

Figure 3. 1991 Massachusetts Commercial Lobster Fishery: Total Monthly Territorial Harvest for Coastal and Seasonal License Types

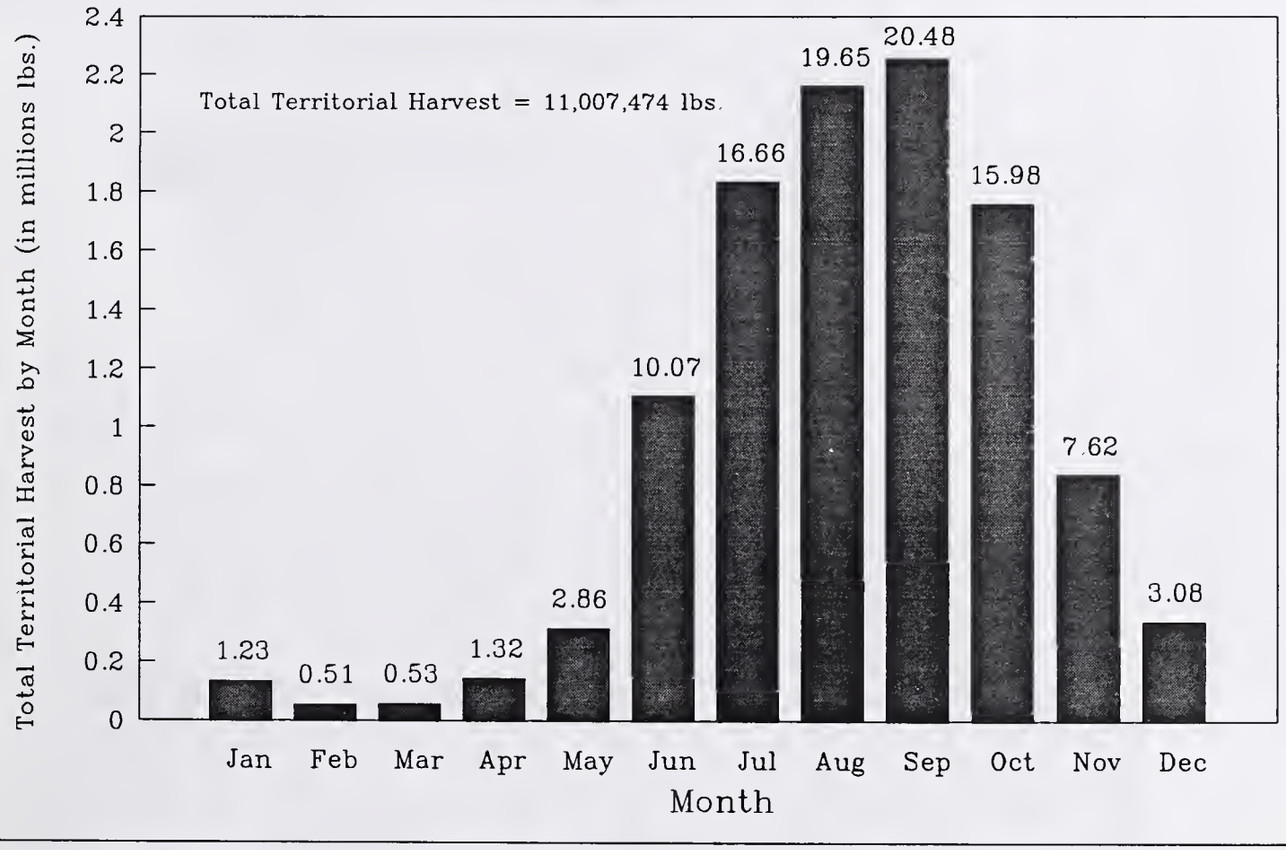


Table 8. 1991 Massachusetts Commercial Lobster Fishery; Percent Territorial Harvest by Area Fished for Each License Type

Area Fished	Coastal	Seasonal
1	1.30	2.84
2	11.25	8.68
3	13.94	6.69
4	41.10	7.66
5	9.91	2.94
6	7.99	26.57
7	3.43	7.96
8	2.99	7.33
9	2.75	9.65
10	0.11	14.20
11	0.01	0.00
12	1.41	0.00
13	1.15	0.00
14	2.64	5.49
	100.00	100.00
Total Pounds	11,000,500.00	6,974.00

Territorial landings were down in 1991 with the greatest decline in Areas 3, 4 and 5. This is most likely a result of the October storm. See Figure 1A for the map of fishing areas and Figure 4 and Table 8 for a complete breakdown by area for each license type and month.

Offshore license landings are not shown in Figures 3 and 4 because license holders of this type cannot harvest lobsters within territorial waters. However, landings are generally more spread out over the year for these individuals compared to the coastal license holders, with most of the harvest coming in the months July to January. This reflects both the offshore potmen whose catch peaks much like the coastal potmen, and the draggers whose catch peaks in the winter months.

Figure 4. 1991 Massachusetts Commercial Lobster Fishery; Total Territorial Harvest for Coastal and Seasonal License Types by Area Fished

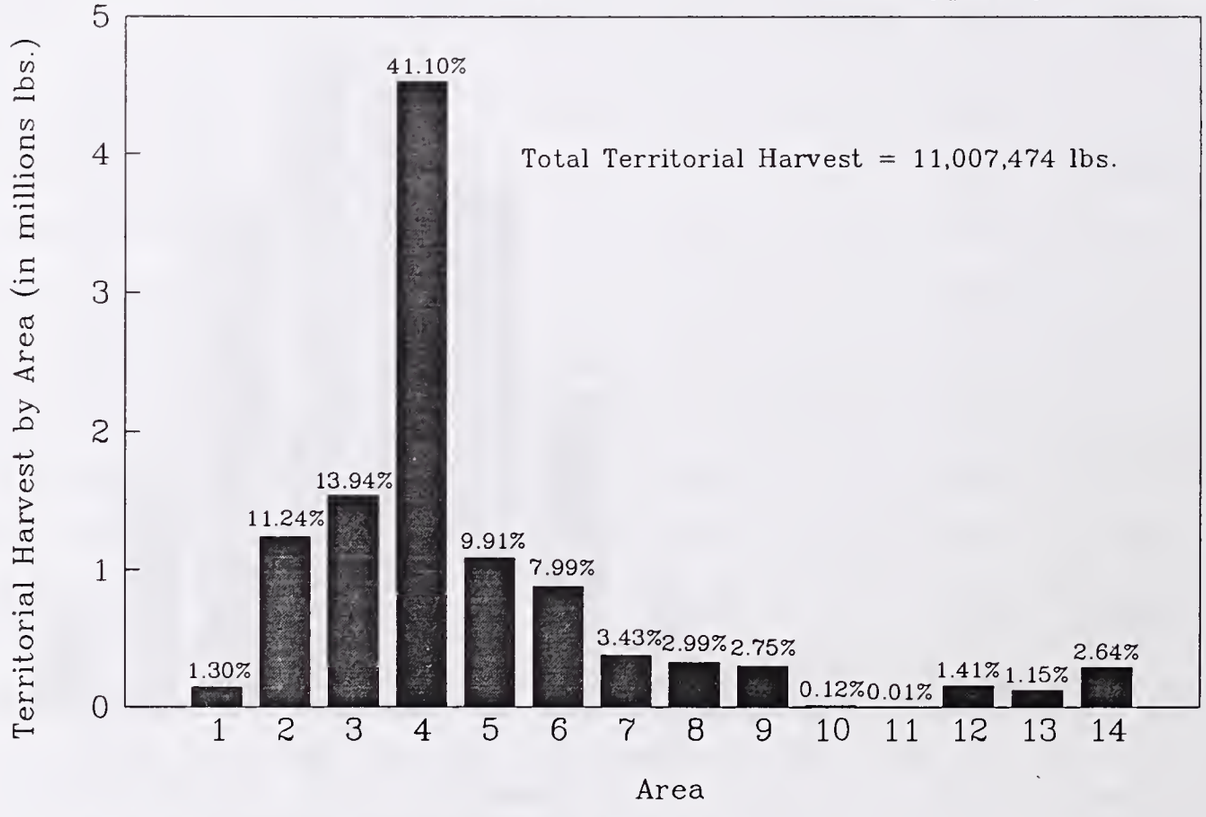
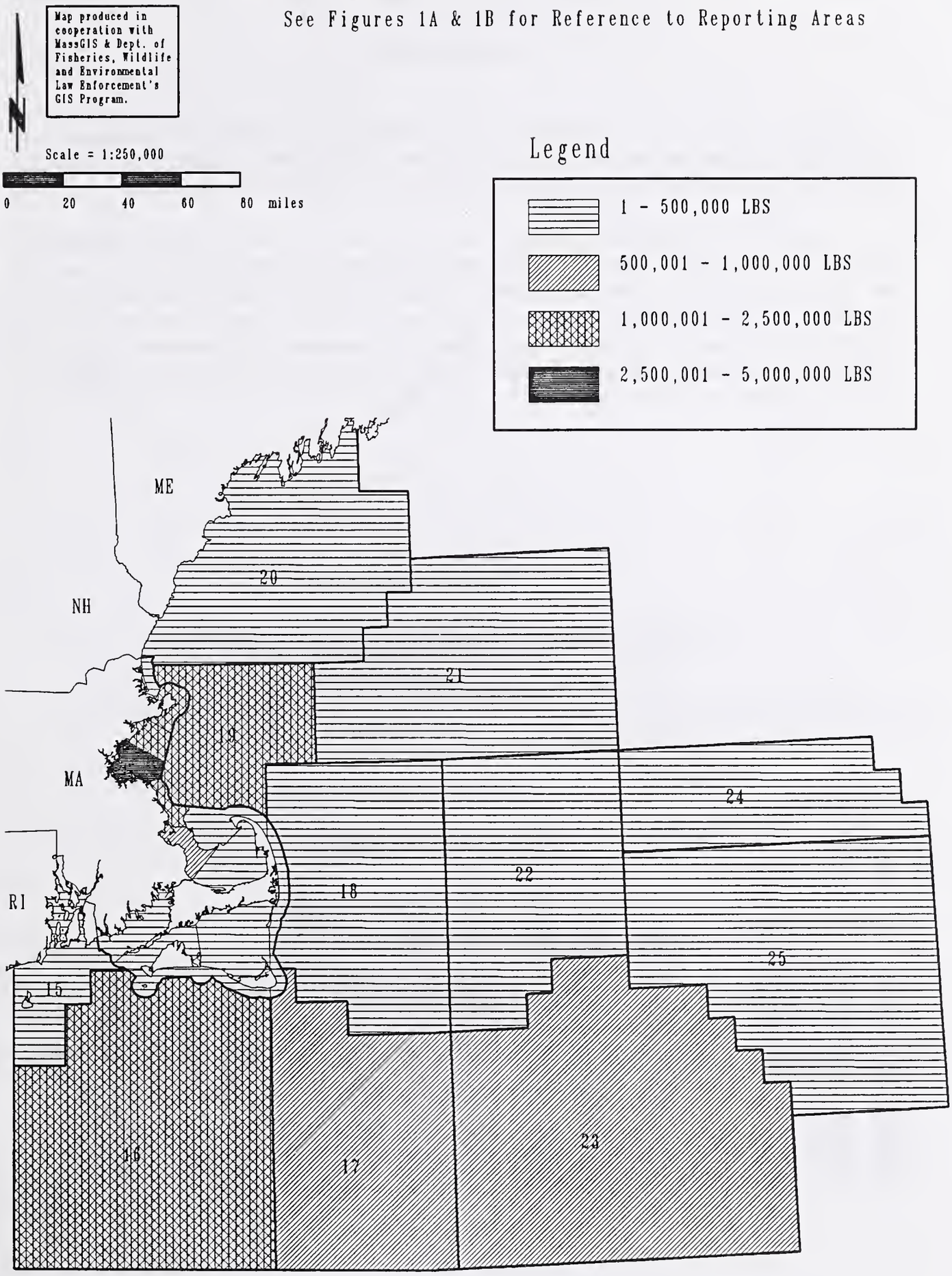


Figure 5. 1991 Massachusetts Lobster Fishery Landings by Statistical Reporting Area

See Figures 1A & 1B for Reference to Reporting Areas



CATCH RATES

The average catch per trap haul for coastal lobstermen was .6328 pounds, an increase over 1990. For traps fished one set-over day the average was, .3513; for those fished two days, .5615; for three days, .6424; and for four days, .7074. See Figure 6 for catch effort by set-over day.

Figures 7 and 8 reflect the average catch per trap haul - set-over day for area fished and month, where set-over day is factored into the effort. The average catch per trap haul - set-over day for 1991 was .2221, a slight decrease from 1990. Overall these figures should be categorized as "estimates" since, in many cases, fishermen will estimate the number of traps hauled per trip for each month. If a fisherman leaves this information blank, or the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month is out of range for a particular month, the information is not factored into the analysis.

Figure 6. 1991 Massachusetts Commercial Lobster Fishery: Catch per Unit of Effort by Set-Over Day for Coastal and All Potman

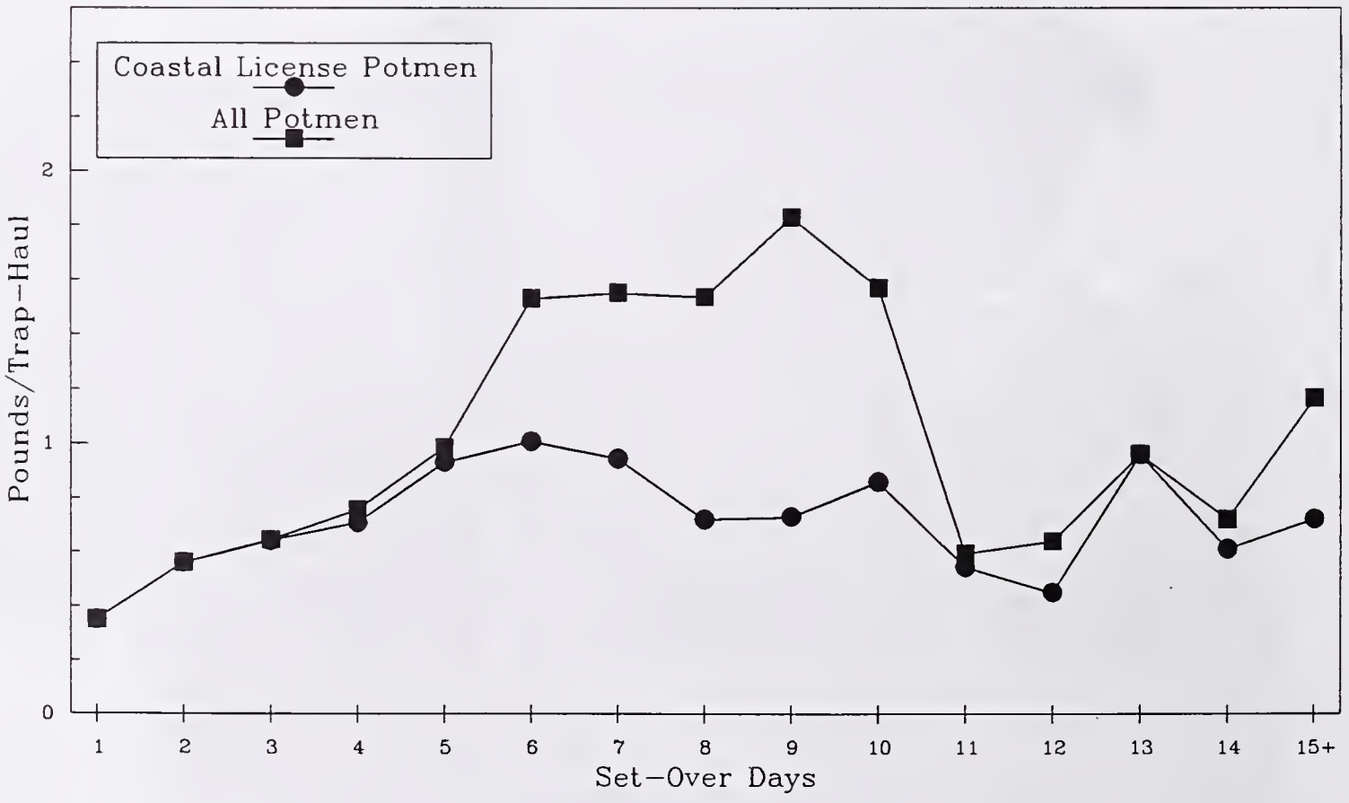


Figure 7. 1991 Massachusetts Commercial Lobster Fishery: Catch per Unit of Effort for Coastal and All Potmen by Month

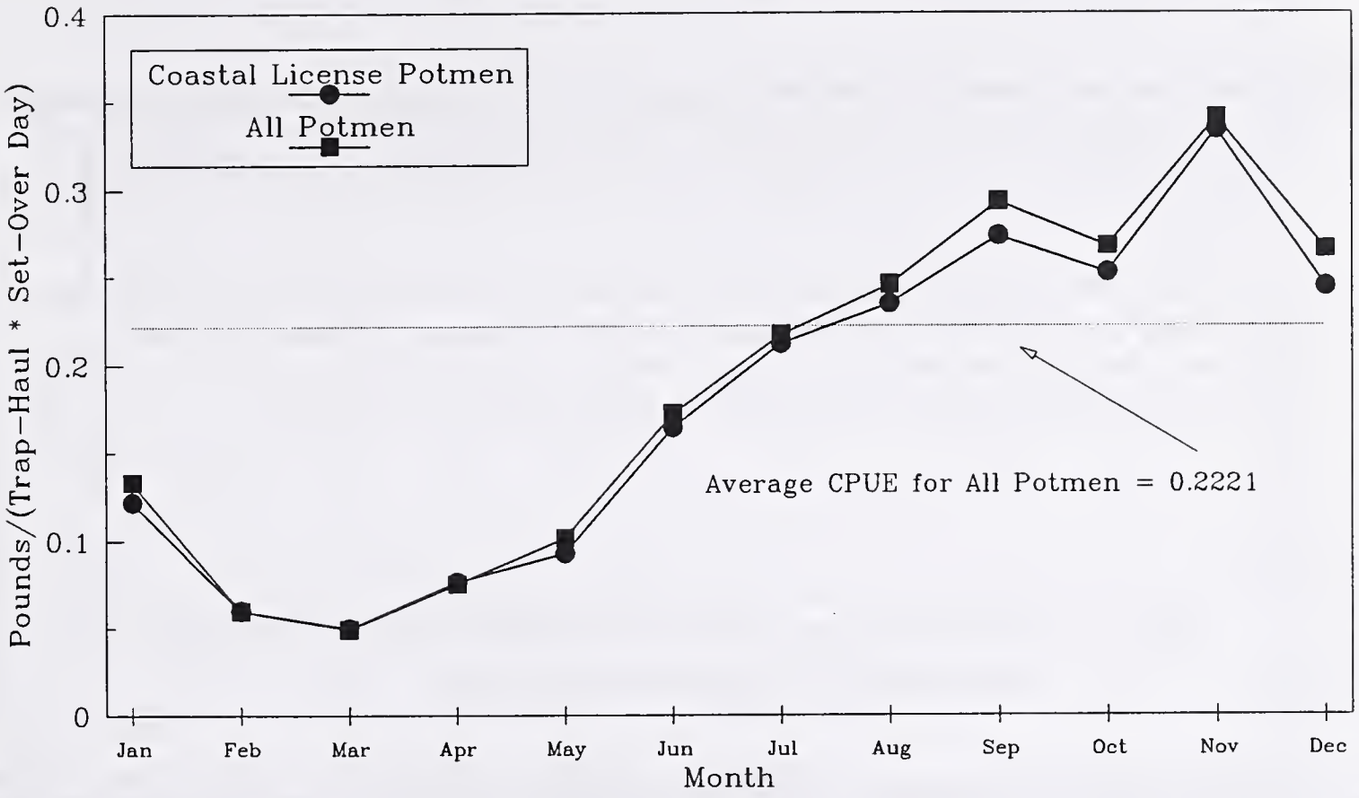
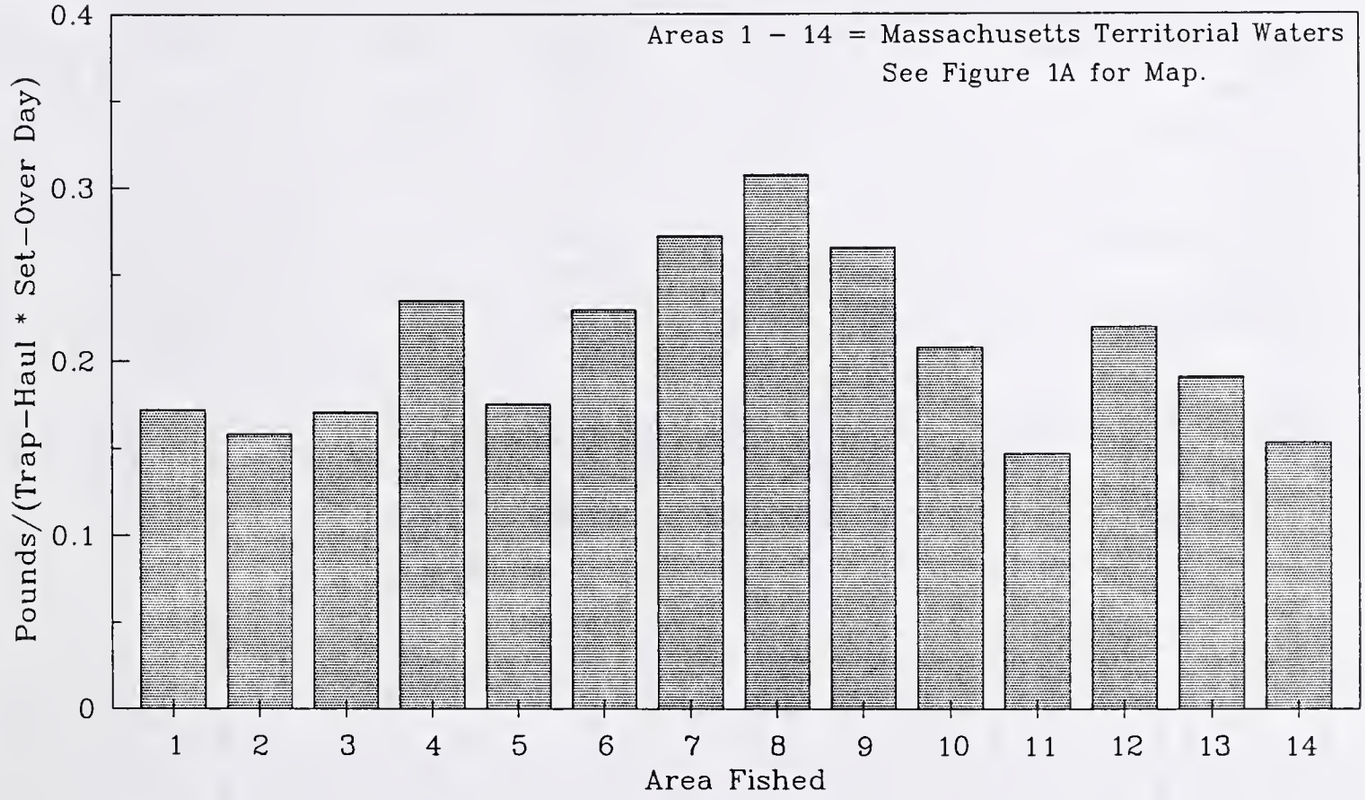


Figure 8. 1991 Massachusetts Commercial Lobster Fishery: Catch per Unit of Effort for All License Types by Area Fished



FISHING GEAR, VESSELS AND VALUE

In the commercial fishery, traps were valued at $24,496,095, diving gear at $53,486, and power and non-power boats at $52,798,057, yielding a total gear value of $77,347,638. Combined with the ex-vessel value of lobster sold, $43,841,631, gives a total fishery value of $121,189,269. See Tables 9, 10 and 11.

Overall, 73% of the traps fished in the commercial fishery were wire framed, with 26% being wooden framed and less than 1% categorized as "other". This supports a continuing trend of increasing wire traps employed in the fishery. Average value (including warp and buoy) ranged anywhere from $31.33 to $100.00, with an overall average of $50.17. See Table 9.

Table 9. 1991 Massachusetts Commercial Lobster Fishery; Trap Types Fished and Value for Each License Type

	Coastal	Offshore	Seasonal	Total Trap Type	Percent of Total
Wooden Framed Traps	116,851	12,182	104	129,136	26.45%
Value	$5,531,187	$977,665	$3,259	$6,512,110	
Value/Trap	$47.34	$80.26	$31.33	$50.43	
Wire Framed Traps	331,006	26,205	440	357,651	73.25%
Value	$16,071,281	$1,778,601	$16,781	$17,866,662	
Value/Trap	$48.55	$67.87	$38.14	$49.96	
Other Trap Types	681	825	0	1,506	0.31%
Value	$34,824	$82,500	$0	$117,324	
Value/Trap	$51.12	$100.00		$77.89	
Total for License Type	448,538	39,212	544	488,294	
Value	$21,637,291	$2,838,765	$20,039	$24,496,095	
Value/Trap	$48.24	$72.40	$36.84	$50.17	

Value of trap includes warp and buoy. These figures include out-of-state fishermen.

Table 10. 1991 Massachusetts Commercial Lobster Fishery; Number of Fishing Vessels and Pots Fished

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	COASTAL				SEASONAL		COASTAL		OFFSHORE			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRIRTORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Pots Fished		32,320	2,721		90	35,131	4,750		13,111		17,861	52,992
Power Boat	3	123	11		5	142	9	1	15	36	61	203
Non Power Boat	1	24	3			28			1		1	29
BRISTOL												
Pots Fished		15,059				15,059	9,661		14,171		23,832	38,891
Power Boat		62				62	19		20	169	208	270
Non Power Boat		3				3					0	3
DUKES												
Pots Fished		2,735	150			2,885	1,225		1,704		2,929	5,814
Power Boat		21	2			23	3		8	3	14	37
Non Power Boat		4				4	1				1	5
ESSEX												
Pots Fished		163,299	1,262		198	164,759	18,239		3,190		21,429	186,188
Power Boat	2	451	8		9	470	31	5	6	84	126	596
Non Power Boat		125	4		1	130	1				1	131
NANTUCKET												
Pots Fished		514				514	909				909	1,423
Power Boat		5				5	2			1	3	8
Non Power Boat						0					0	0
NORFOLK												
Pots Fished		19,370	950		18	20,338	2,172				2,172	22,510
Power Boat		55	2		1	58	2				2	60
Non Power Boat		15	1			16					0	16
PLYMOUTH												
Pots Fished		96,625	2,731		238	99,594	11,035		2,286		13,321	112,915
Power Boat	3	269	11	4	11	298	11	4	7	19	41	339
Non Power Boat		88	2			90	3		3		6	96
SUFFOLK												
Pots Fished		59,546	125			59,671	2,650		2,870		5,520	65,191
Power Boat	1	110	2			113	4		7	26	37	150
Non Power Boat		7				7	1		1		2	9
STATE TOTAL												
Pots Fished		389,467	7,939		544	397,951	50,641	0	37,332	0	87,973	485,924
Power Boat	9	1,096	36	4	26	1,171	81	10	63	338	492	1,663
Non Power Boat	1	266	10	0	1	278	6	0	5	0	11	289
OUT OF STATE												
Pots Fished		490				490			1,880		1,880	2,370
Power Boat		2				2			2	14	16	18
Non Power Boat		1				1					0	1

Table 11. 1991 Massachusetts Commercial Lobster Fishery; Value of Fishing Vessels and Diving Gear

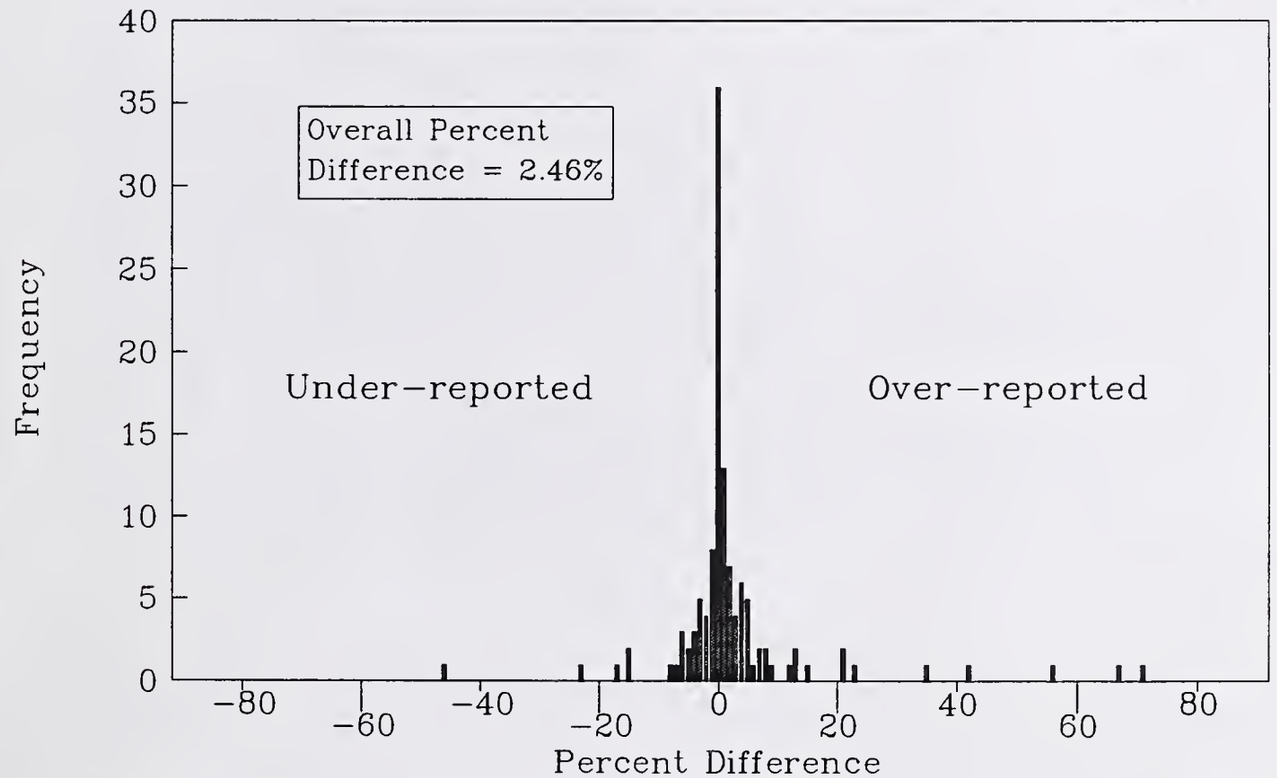
AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	COASTAL				SEASONAL		COASTAL		OFFSHORE			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRIRTORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Diving Gear	6,750		9,649			16,399					0	16,399
Power Boat	5,880	2,843,383	191,500		21,000	3,061,763	870,450	25,000	2,719,790	307,865	3,923,105	6,984,867
Non Power Boat	50	4,899	938			5,886			165		165	6,051
BRISTOL												
Diving Gear						0					0	0
Power Boat		1,227,253				1,227,253	1,070,750		2,358,800	3,160,607	6,590,157	7,817,410
Non Power Boat		363				363					0	363
DUKES												
Diving Gear			7,500			7,500					0	7,500
Power Boat		353,475	9,000			362,475	156,900		201,500	22,550	380,950	743,425
Non Power Boat		1,420				1,420	1,400				1,400	2,820
ESSEX												
Diving Gear	2,800		2,455			5,255					0	5,255
Power Boat	105,000	13,056,842	129,400		56,583	13,347,825	2,183,133	126,200	702,600	794,848	3,806,781	17,154,606
Non Power Boat		51,359	3,650		800	55,809	300				300	56,109
NANTUCKET												
Diving Gear						0					0	0
Power Boat		78,000				78,000	101,500			30,000	131,500	209,500
Non Power Boat						0					0	0
NORFOLK												
Diving Gear			1,360			1,360					0	1,360
Power Boat		1,917,075	65,000		2,500	1,984,575	15,500				15,500	2,000,075
Non Power Boat		6,495	400			6,895					0	6,895
PLYMOUTH												
Diving Gear	10,580		5,942			16,522					0	16,522
Power Boat	26,500	7,565,472	310,500	142,400	32,970	8,077,842	570,000	14,250	259,750	146,586	990,586	9,068,428
Non Power Boat		49,709	545			50,254	1,400		2,050		3,450	53,704
SUFFOLK												
Diving Gear	3,000		3,450			6,450					0	6,450
Power Boat	45,000	4,871,079	27,625			4,943,704	272,000		1,492,000	1,260,300	3,024,300	7,968,004
Non Power Boat		1,496				1,496	100		200		300	1,796
STATE TOTAL												
Diving Gear	23,130	0	30,356		0	53,486	0	0	0	0	0	53,486
Power Boat	182,380	31,912,577	733,025	142,400	113,053	33,083,435	5,240,233	165,450	7,734,440	5,722,756	18,862,879	51,946,314
Non Power Boat	50	115,740	5,533	0	800	122,122	3,200	0	2,415	0	5,615	127,737
OUT OF STATE												
Diving Gear						0					0	0
Power Boat		43,000				43,000			540,000	140,706	680,706	723,706
Non Power Boat		300				300					0	300

VALIDITY OF DATA

Each year 150 coastal license holders are selected and audited for the records they used to complete the catch portion of their catch report. The Division does this to assess the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year. The audit was first instituted in 1977 for the 1976 catch reports. Over the last five years the lobstermen selected for audit reported landing 6,239,094 pounds. The audit of their records revealed a harvest of 6,163,162 pounds or a difference of 1.22 percent.

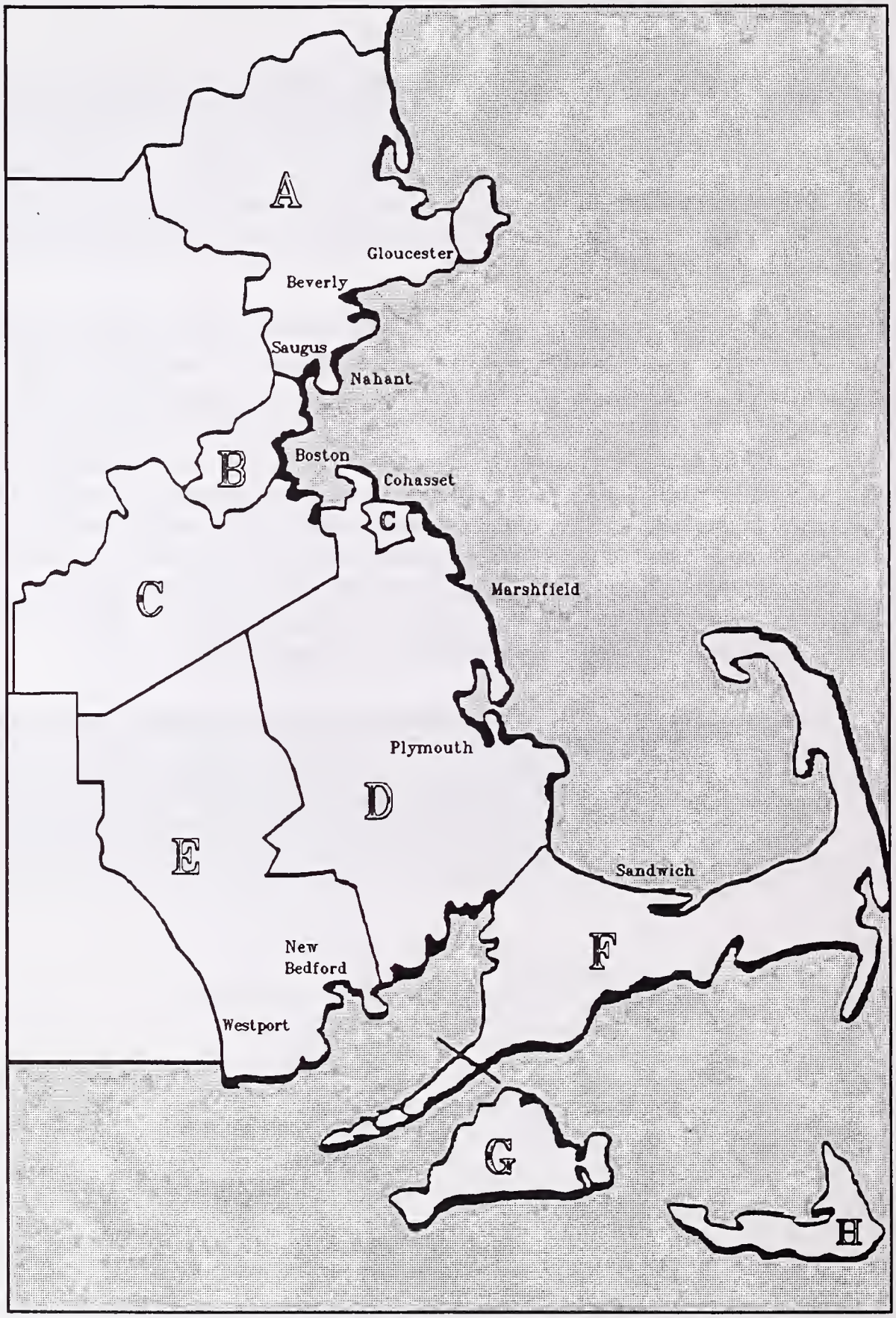
Last year the fishermen selected for audit reported harvesting 1,186,422 pounds of lobster on their 1991 catch reports. The audit of their actual records showed total landings of 1,216,391 pounds, a difference of 29,969 pounds or 2.46 percent. Nine of the randomly selected fishermen have yet to respond to the audit request. Figure 9 shows the distribution of the percent difference between the selected fishermen's reported catch and their audited records. In general, reported landings are very well documented by dealer receipts and/or personal records, especially by the so-called "high-liners" in the fishery. Most of the lobstermen have had licenses for several years and know what is required in terms of reporting their fishing activities in addition to the value of accurate reporting in the development of management plans. They also know that their reported information is kept strictly confidential and published only in aggregate form. These factors all contribute to a fairly conscientious and responsible reporting constituency.

Figure 9. Massachusetts Commercial Lobster Fishery; Frequency Distribution of the Percent Difference Between Fishermen's Reported Catch and Their Audited Records



Number of Fishermen Audited = 148

Figure 10. Coastal Map of Massachusetts Showing Statistical Reporting Areas (Counties)



A. Essex
B. Suffolk
C. Norfolk
D. Plymouth
E. Bristol
F. Barnstable
G. Dukes
H. Nantucket

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